Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: Fri Jun 08 19:25:03 EDT 2007

<210> 13

<211> 21 <212> DNA

<213> Artificial Sequence

<220>

<221> primer bind

Reviewer Comments:

<223> reverse primer specific for TCR BV3 used in real-time

PCR analysis

<400> 13

ggtgctggcg gactccagaa t

The above <213> Artificial Sequence is in an incorrect position; all numeric identifiers must be directly under each other. Do not use Tab kevs. Same type of error in Sequences 20, 43, 50, 53, 68.

21

<400> 168

tacttetgtg ecageagtte cetegetact getgaagett tetttggaca agge 54 22

22

??

Please delete the ?'s at the end of the submitted file.

*****	******	*****	******	*****	*****	

Validated By CRFValidator v 1.0.2

Application No:

10612468

Version No:

2.0

Input Set:

Output Set:

Started: 2007-06-07 09:18:35.574

Finished: 2007-06-07 09:18:39.094
Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 520 ms

Total Warnings: 116

Total Errors: 118
No. of SeqIDs Defined: 168
Actual SeqID Count: 168

Unknown in SEQID (13)

Error code		Error Description				
W	213	Artificial or Unknown found in <213> in SEQ ID (1)				
Ε	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (1) $$				
W	213	Artificial or Unknown found in <213> in SEQ ID (2)				
Ε	224	<220>,<223> section required as <213> has ${\tt Artificial}$ sequence or ${\tt Unknown}$ in SEQID (2)				
W	213	Artificial or Unknown found in <213> in SEQ ID (8)				
Е	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (8)				
W	213	Artificial or Unknown found in <213> in SEQ ID (9)				
Ε	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (9)				
W	213	Artificial or Unknown found in <213> in SEQ ID (10)				
Ε	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (10)				
W	213	Artificial or Unknown found in <213> in SEQ ID (11)				
Ε	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEGID (11)				
W	213	Artificial or Unknown found in <213> in SEQ ID (12)				
Е	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (12)				
W	213	Artificial or Unknown found in <213> in SBQ ID (13)				
Е	224	<220>,<223> section required as <213> has Artificial sequence or				

Input Set:

Output Set:

Started: 2007-06-07 09:18:35.574
Finished: 2007-06-07 09:18:39.094
Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 520 ms
Total Warnings: 116

Total Errors: 118
No. of SeqIDs Defined: 168
Actual SeqID Count: 168

Unknown in SECID (22)

Error code		Error Description
W	213	Artificial or Unknown found in <213> in SEQ ID (14)
E	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (14)
W	213	Artificial or Unknown found in <213> in SEQ ID (15)
Ē	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (15)
W	213	Artificial or Unknown found in <213> in SEQ ID (16)
Е	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (16)
W	213	Artificial or Unknown found in <213> in SEQ ID (17)
Ē	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (17)
W	213	Artificial or Unknown found in <213> in SEQ ID (18)
Ε	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (18)
W	213	Artificial or Unknown found in <213> in SEQ ID (19)
Ε	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (19)
W	213	Artificial or Unknown found in <213> in SEQ ID (20)
E	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (20)
W	213	Artificial or Unknown found in <213> in SEQ ID (21)
E	224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (21)
W	213	Artificial or Unknown found in <213> in SEQ ID (22)
E	224	<220>,<223> section required as <213> has Artificial sequence or

Input Set:

Output Set:

Started: 2007-06-07 09:18:35.574

Finished: 2007-06-07 09:18:39.094

Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 520 ms

Total Warnings: 116
Total Errors: 118
No. of SeqIDs Defined: 168

E 250

No. o	of SeqIDs Defined: 168
A	ctual SeqID Count: 168
Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (23)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (23)
W 213	Artificial or Unknown found in <213> in SEQ ID (24)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (24)
W 213	Artificial or Unknown found in <213> in SEQ ID (25) This error has occured more than 20 times, will not be displayed
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SECTO (25) This error has occured more than 20 times, will not be displayed
E 249	Order Sequence Error <211> \rightarrow <213>; Expected Mandatory Tag: <212> in SEQID (146)

Structural Validation Error; Sequence listing may not be indexable

```
SEQUENCE LISTING
<110> Shang, Jingwu S.
Ho, Walter Kowk Keung
 Shang, Dongging
 Sun, Wei
<120> T Cell Receptor CDR3 Sequence and Methods for
 Detecting and Treating Rhoumatoid Arthritis
<130> D6622
<140> US 10/612,468
<141> 2003-07-02
<160> 168
<210> 1
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> CDS
<223> part of the complementary determining region-3 (CDR3)
 in the V(16 family (BV16 gene) of T cell receptors
 (TCR) in patients with rheumatoid arthritis (RA)
<400> 1
agccaagetg acgggaceca t
                                                21
<210> 2
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<2215 CD5
<223> part of the complementary determining region-3
 (CDR3) in the V(14 family (BV14 gape) of TCR in
 patients with RA
<400> 2
agttccgqqq qcagtctgtt e
                                                21
<210> 3
<211> 7
<212> PRT
<213> Homo sapiens
<220>
<223> conserved amino acid sequence derived from CDR3 of
TCR beta-chain BV16 in patients with RA
<400> 3
```

Ser Gln Ala Asp Gly Thr His

```
<210> 4
<211> 7
<212> PRT
<213> Homo sapiens
<220>
<221> Pentide
<223> conserved amino acid sequence derived from CDR3 of
TCR beta-chain BV14 in patients with RA
<400> 4
Ser Ser Gly Gly Ser Leu Phe
                5
<210> 5
<211> 4
<212> PRT
<213> Homo saniens
<220>
<221> Peptide
<223> amino acid sequence motif derived from CDR3 of TCR
beta-chain BV16 in patients with RA
<400> 5
Ser Trp Gly Gly
<210> 6
<211> 113
<212> PRT
<213> Homo sapiens
<220>
<221> Domain
<223> amino acid sequence of human (beta-chain variable
region V(14 of T cell receptors
<400> 6
Met Gly Pro Gln Leu Leu Gly Tyr Val Val Leu Cys Leu Leu Gly
                                     10
Ala Gly Pro Leu Glu Ala Gln Val Thr Gln Asn Pro Arg Tyr Leu
                 20
                                     25
Ile Thr Val Thr Gly Lys Lys Leu Thr Val Thr Cys Ser Gln Asn
                 35
                                     40
Met Asn His Glu Tyr Met Ser Trp Tyr Arg Gln Asp Pro Gly Leu
                                     55
Gly Leu Arg Gim Ile Tyr Tyr Ser Met Asm Val Glu Val Thr Asp
                 65
Lys Gly Asp Val Pro Glu Gly Tyr Lys Val Ser Arg Lys Glu Lys
                                     85
Arg Asn Phe Pro Leu Ile Leu Glu Ser Pro Ser Pro Asn Gln Thr
                95
                                    100
                                                        105
Ser Leu Tyr Phe Cys Ala Ser Ser
                110
```

```
<210> 7
<211> 96
<212> PRT
<213> Homo sapiens
<220>
<221> Domain
<223> amino acid sequence of human (beta-chain variable
region V/16 of T cell recentors
<400> 7
Ile Glu Ala Gly Val Thr Gln Phe Pro Ser His Ser Val Ile Glu
                 5
                                     10
Lys Gly Gln Thr Val Thr Leu Arg Cys Asp Pro Ile Ser Gly His
Asp Asn Leu Tvr Trp Tvr Arg Arg Val Met Glv Lvs Glu Ile Lvs
                 35
                                     40
Phe Leu Leu His Phe Val Lys Glu Ser Lys Gln Asp Glu Ser Gly
Met Pro Asn Asn Arg Phe Leu Ala Glu Arg Thr Gly Gly Thr Tyr
                 65
                                     70
Ser Thr Leu Lys Val Glm Pro Ala Glu Leu Glu Asp Ser Gly Val
                 80
Tyr Phe Cys Ala Ser Ser
                 95
<210> 8
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BVl used in real-time
PCR analysis
<400> 8
aaggaggtga toagaggaag t
                                              21
<210> 9
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV1 used in real-time
PCR analysis
<400> 9
                                              21
tagttcagag tgcaagtcag g
<210> 10
<211> 23
<212> DNA
<213> Artificial Sequence
```

```
<220>
<221> primer_bind
<223> forward primer specific for TCR BV2 used in real-time
PCR analysis
<400> 10
ggttatctgt aagagtggaa cet
                                              23
<210> 11
<211> 21
<212> DMA
<213> Artificial Sequence
<220>
<221> primer bind
<223> reverse primer specific for TCR BV2 used in real-time
PCR analysis
<400> 11
                                              21
aggatgggca ctggtcactg t
<210> 12
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV3 used in real-time
 PCR analysis
<400> 12
togagatato tagtosasag gaog
                                             24
<210> 13
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> reverse primer specific for TCR BV3 used in real-time
PCR analysis
<400> 13
ggtgctggcg gactccagaa t
                                               21
<210> 14
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV4 used in real-time
 PCR analysis
```

```
<400> 14
aagcagggat atctgtcaac gt
                                               22
<210> 15
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV4 used in real-time
PCR analysis
<400> 15
ttcappocto atottoctos o
                                              21
<210> 16
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV5 used in real-time
PCR analysis
<1005 16
gatcasascg agaggacagc a
                                              21
<210> 17
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> reverse primer specific for TCR BV5 used in real-time
PCR analysis
<400> 17
aggaggagg cgctcacatt ca
                                              22
<210> 18
<211> 21
<212> DMA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV6 used in real-time
PCR analysis
```

```
<210> 19
<211> 21
<212> DNJ
<213> Artificial Sequence
<220>
<221> primer bind
<223> reverse primer specific for TCR BV6 used in real-time
PCR analysis
<400> 19
coecceptet gtgegetgga t
                                              21
<210> 20
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV7 used in real-time
PCR analysis
<400> 20
catgggaatg acaaataaga agtet
                                              25
<210> 21
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV7 used in real-time
PCR analysis
<400> 21
                                              21
tggctgcagg gcgtgtaggt g
<210> 22
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV8 used in real-time
PCR analysis
<400> 22
ccccgccatg aggtgacaga g
                                              21
<210> 23
<211> 21
<212> DNA
<213> Artificial Sequence
```

```
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV8 used in real-time
PCR analysis
<400> 23
gagtocotga attetgagge e
                                               21
<210> 24
<211> 21
<212> DMA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV9 used in real-time
PCR analysis
<400> 24
ccasastace tegicacaca e
                                               21
<210> 25
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV9 used in real-time
PCR analysis
<400> 25
ccagggaatt gatgtgaaga tt
                                              22
<210> 26
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV10 used in real-time
PCR analysis
<400> 26
acctagactt ctggtcaaag ca
                                              22
<210> 27
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV10 used in real-time
PCR analysis
```

```
<400> 27
ggactggate tecaaggtac a
                                               21
<210> 28
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<221> primer hind
<223> forward primer specific for TCR BV11 used in real-time
PCR analysis
<400> 28
ttatagggac aggaaagaag atc
                                                23
<210> 29
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV11 used in real-time
PCR analysis
<400> 29
atgtgaggge etggeagaet e
                         21
<210> 30
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV12 used in real-time
PCR analysis
<400> 30
caagacacaa gatcacagag aca
                                                 23
<210> 31
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> reverse primer specific for TCR BV12 used in real-time
PCR analysis
<400> 31
ggeageagae tecagagtga g
                                                 21
<210> 32
<211> 23
```

```
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV13 used in real-time
PCR analysis
<400> 32
tgaagacagg acagagcatg aca
                                                  23
<210> 33
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> reverse primer specific for TCR BV13 used in real-time
PCR analysis
<400> 33
                                                  21
cacagatgtc tgggagggag c
<210> 34
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV14 used in real-time
PCR analysis
<400> 34
acccaagata cotcatcaca gtg
                                                   23
<210> 35
22115 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV14 used in real-time
PCR analysis
<400> 35
agaggtetgg ttggggetgg g
                                                   21
<210> 36
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
```

```
<223> forward primer specific for TCR BV15 used in real-time
 PCR analysis
<400> 36
tcacaaagac aggaaagagg att
                                                   23
<210> 37
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV15 used in real-time
PCR analysis
<400> 37
                                                   21
ggggatggca gactctaggg a
<210> 38
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV16 used in real-time
PCR analysis
<400> 38
                                                   22
gttccccagc cacagogtaa ta
<210> 39
<211> 21
<212> DNA
<213> Artificial Sequence
<220×
<221> primer bind
<223> reverse primer specific for TCR BV16 used in real-time
 PCR analysis
<400> 39
caqttotqca qqctqcacct t
                                                   21
<210> 40
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR EV17 used in real-time
PCR analysis
<400> 40
qtecceaaaq tacetottea ga
```

```
<210> 41
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> reverse primer specific for TCR BV17 used in real-time
PCR analyzis
<400> 41
agetgteggg ttettttggg e
                                                   21
<210> 42
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV18 used in real-time
PCR analysis
<400> 42
agacacctgg tcaggaggag g
                                                   21
<210> 43
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV18 used in real-time
PCR analysis
<400> 43
torcomatet cetegracia e
                                                   21
<210> 44
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for ICR BV19 used in real-time
PCR analysis
<400> 44
                                                   24
ccaggacatt tggtcaaagg aaaa
<210> 45
<211> 21
<212> DNA
<213> Artificial Sequence
```

```
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV19 used in real-time
PCR analysis
<400> 45
cagtgoogtg toteeeggtt e
                                                   21
<210> 46
<211> 19
<212> DMA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV20 used in real-time
 PCR analysis
<400> 46
                                                   19
gaccotggtg cagootgtg
<210> 47
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> reverse primer specific for TCR BV20 used in real-time
 PCR analysis
<400> 47
gaggaggage ttettagase t
                                                   21
<210> 48
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV21 used in real-time
PCR analysis
<400> 48
cccadatata adattacada dasa
                                                   24
<210> 49
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV21 used in real-time
```

PCR analysis

```
<400> 49
ctggatcttg agagtggagt c
                                                   21
<210> 50
<211> 23
<212> DNA
<213> Artificial Seguence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV22 used in real-time
PCR analysis
<400> 50
cacagatogo acaggaagto atc
                                                   23
<210> 51
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV22 used in real-time
PCR analysis
<4005 S1
gtectecage tttgtggacc g
                                                   21
<210> 52
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV23 used in real-time
PCR analysis
<400> 52
aagagggaaa cagccactct g
                                                   21
<210> 53
<211> 21
<212> DMA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV23 used in real-
time PCR analysis
<400> 53
cageteeaag gageteatgt t
```

<210> 54

```
<211> 24
<212> DUA
<213> Artificial Sequence
<220>
<221> primer bind
<223> forward primer specific for TCR BV24 used in real-time
PCR analysis
<400> 54
                                    24
ccaagatacc aggttaccca gttt
<210> 55
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV24 used in real-time
 PCR analysis
<400> 55
caggootggt gageggatgt e
                                                   21
<210> 56
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> forward primer specific for TCR BV25 used in real-time
PCR analysis
<400> 56
aaaacatott qtcaqaqqqq aa
                                                   22
22105 ST
<211> 21
<212> DNA
<213> Artificial Seguence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BV25 used in real-time
PCR analysis
<400> 57
tgaateetea agettegtag e
                                                   21
<210> 58
<212> DNA
<213> Artificial Sequence
```

<220>

```
<221> primer_bind
<223> forward primer specific for TCR BC used in real-time PCR
analysis
<400> 58
cagogooott gtgttgatg
                                                   19
<210> 59
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> reverse primer specific for TCR BC used in real-time PCR
analysis
<400> 59
aagogotggo aaaagaagaa
                                                   20
<210> 60
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> BC primer used for run-off reactions
<400> 60
                                                   18
cgacctcggg tgggaaca
<210> 61
<211> 19
<212> DNA
<213> Artificial Sequence
<220×
<221> primer bind
<223> FAM (expand)-labeled BC primer used for run-off reactions
<400> 61
                                                   19
cacagogaco togggtggg
<210> 62
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions
<400> 62
actgtgagte tggtgeettg t
                                                   21
```

```
<210> 63
<211> 24
<212> DNJ
<213> Artificial Sequence
<220>
<221> primer bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions
<400> 63
                                                   24
acaacggtta acttggtccc cgaa
<210> 64
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions
<400> 64
                                                   24
ggteetetae aacagtgage caac
<210> 65
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<221> primer bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions
<400> 65
aagagagaga getgggttee aetg
                                                   24
<210> 66
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions
<400> 66
ggagagtoga gttccatca
                                                   19
<210> 67
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions
```

```
<400> 67
                                                   24
tgtcacagtg agectggtcc catt
<210> 68
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions
<400> 68
cetqqeeeqa agaactqete a
                                                   21
<210> 69
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions
<400> 69
gtoctcoagt accetcages taga
                                                   24
<210> 70
<211> 21
<212> DNA
<213> Artificial Sequence
```

<223> FAM (expand)-labeled BJ primer used for r

<220> <221> primer_bind